

Abstract Submitted
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Molecular Dications and the Auroral Mystery Feature: Measurements on Nitrogen¹ A.N. DAW, S.M. BREWER, C.C. ESTES, J.A. KANOY, B.W. MYER, A.G. CALAMAI, Appalachian State University — Experiments in progress at the ASU ion trapping facility will provide atomic and molecular data for N^+ , N_2^{++} , and N_2 , specifically, measurements of: the radiative lifetime of the 5S metastable level of N^+ , the dissociation rate of N_2^{++} , electron capture rates from molecular nitrogen for both these ions, and the cross section for dissociative electron impact ionization of molecular nitrogen into metastable 5S N^+ . Ions are created in a radiofrequency ion trap by electron bombardment on nitrogen gas, and both the number of stored ions and the UV radiation emitted by the stored ion population (from decaying metastable $N^+(^5S)$ ions and $N_2^{++}+N_2$ reactions) are measured as a function of time. Preliminary data and results will be presented

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